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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,911

03/22/2004

Daniel L. Pfahlert

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10/05/2005

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EXAMINER

HUNNINGS, TRAVIS R

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,911

Applicant(s)

PFAHLERT ET AL.

Examiner

Travis R. Hunnings

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because in figure 5, the box labeled "Determining..." should be referred to using the reference number '540' and not '530' as currently shown; also in figure 6, element 600 is not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7-9, 11, 15, 16, 18, 19, 22, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kissel (US Patent 5,744,932).

Regarding claim 1, Kissel discloses *Apparatus And Method For Monitoring Backup Battery Flow Charge* that has the following claimed limitations:

The claimed sensor for coupling to a battery string at a single point and for sensing a signal thereof is met by the AC current probe attached to the backup batteries as shown in figure 1;

The claimed logic circuit coupled to said sensor and for detecting a battery failure of said battery string and in response thereto said circuit for automatically generating a message over a communication network indicating said battery failure is met by the AC ammeter and the remote indicator as shown in figure 1, the ammeter detects failure of a part of the battery backup circuit through the ripple current and sends a signal (communication network) to the logic circuit for indicating failure, the line between the ammeter and remote indicator would have been considered a communication network.

Regarding claim 7, the claimed logic circuit detecting battery failure in response to said sensor detecting an electrical signal of said battery string dropping below a prescribed threshold is met by the AC ripple current being measured having a low limit and a high limit and an alarm being activated when the AC ripple current is detected out of the bounds of those two limits (abstract).

Regarding claim 8, the claimed battery string being part of an un-interruptible power supply (UPS) circuit and wherein further said logic circuit is also for detecting failure in a rectifier of said UPS circuit is met by the device being used for a UPS system (abstract) and detecting failure of the circuit which includes the AC to DC rectifier as shown in figure 1 (abstract).

Regarding claim 9, the claimed logic circuit detecting said rectifier failure in response to said sensor detecting an electrical signal of said battery string raising above a prescribed threshold is met by the AC ripple current being measured having a low limit and a high limit and an alarm being activated when the AC ripple current is detected out of the bounds of those two limits (abstract).

Regarding claim 11, the claim is interpreted and rejected as claim 1 stated above.

Regarding claim 15, the claimed battery system being part of an un-interruptible power supply (UPS) circuit is met by the device being used for a UPS system (abstract). The claimed detecting rectifier failure in said UPS circuit wherein said logic circuit determines that said signal has exceeded a prescribed threshold is met by the AC ripple current being measured having a low limit and a high limit and an alarm being activated when the AC ripple current is detected out of the bounds of those two limits (abstract).

Regarding claim 16, the claimed battery string comprising a plurality of batteries coupled in series is met by the backup batteries shown in figure 1.

The claimed sensor coupled at a single point of said battery string for sensing a ripple current thereof is met by the AC current probe as shown in figure 1 detecting the AC ripple current (abstract).

The claimed logic circuit coupled with said sensor for determining that said ripple current has dropped below a prescribed threshold and for automatically generating a message over a communication network in response to said determining is met by the AC ripple current being measured having a low limit and a high limit and a message being sent to the remote indicator (communication network) that an alarm should be activated because the AC ripple current is detected out of the bounds of those two limits (abstract) the line between the ammeter and remote indicator would have been considered a communication network.

Regarding claim 18, the claim is interpreted and rejected as claim 15 stated above.

Regarding claim 19, the claim is interpreted and rejected as claim 9 stated above.

Regarding claim 22, the claim is interpreted and rejected as claim 16 stated above.

Regarding claim 25, the claim is interpreted and rejected as claim 7 stated above.

Regarding claim 26, the claim is interpreted and rejected as claim 15 stated above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kissel.

Regarding claim 28, the claimed sensing at a single point of said battery system a signal is met by the AC ammeter as shown in figure 1.

The claimed automatically determining a normal operating range of said signal over a period of time is met by the determining the normal AC level of the battery supply (column 5, lines 12-26). It would have been obvious to one of ordinary skill in the art that the device must have a pre-determined normal AC level for the battery supply in order to utilize the device in detecting a signal outside of the normal range.

The claimed recording in a memory a threshold value indicative of said normal operating range is met by the device having pre-selected high and low level limit through selecting means that store the desired high and low level limits (column 5, lines 1-26).

The claimed determining that said signal exceeds said threshold value and automatically generating a failure message over a communication network in response thereto is met by the AC ammeter and the remote indicator as shown in figure 1, the ammeter detects failure of a part of the battery backup circuit through the ripple current and sends a signal (communication network) to the logic circuit for indicating failure when the AC ripple current is out of bounds of the upper or lower level limits (abstract), the line between the ammeter and remote indicator would have been considered a communication network.

6. Claims 2-6, 12-14, 17, 21, 23, 24 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kissel in view of Simonsen (US Patent 5,047,961).

Regarding claim 2, Kissel discloses all of the claimed limitations except for the claimed sensor senses current of said battery string and further comprises a signal conditioning circuit coupled between said sensor and said logic circuit, said signal conditioning circuit for converting a current signal output from said sensor to a voltage signal supplied to said logic circuit. Simonsen discloses *Automatic Battery Monitoring System* that teaches an analog to digital converter that takes the analog current value from a sensor and converts it to a digital voltage value to be fed to a microprocessor (column 4, lines 30-42, 66-68 and column 5, lines 1-15). Adding a microprocessor and an associated analog to digital converter for conditioning the signal to be read by the microprocessor would give the device more functionality and allow the user to program the microprocessor to perform many different operations when a battery failure signal was detected. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Kissel according to the teachings of Simonsen to include a signal conditioning device and a microprocessor to convert the analog current value to a digital voltage value in order for the microprocessor to process the signal.

Regarding claim 3, the claimed current of said battery string being a ripple current through said battery string at said single point is met by the AC ammeter being

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connected to the circuit as seen in figure 1 of Kissel and measuring AC ripple current (Kissel: abstract).

Regarding claim 4, Kissel discloses all of the claimed limitations except for the claimed sensor being a hall effect clamp-on sensor electro-magnetically coupled to said battery string. Simonsen teaches using a hall-effect sensor clamped on to a point of the battery string for detecting current (column 4, lines 30-42). Kissel doesn't disclose the particular type of sensor used in the AC ammeter and it would be easy for one of ordinary skill to use a hall-effect clamp on sensor as taught by Simonsen. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Kissel according to the teachings of Simonsen to use a hall-effect clamp on sensor to detect current.

Regarding claim 5, the claim is interpreted and rejected as claim 3 stated above.

Regarding claim 6, the claimed logic circuit detecting said battery failure in response to said sensor detecting a ripple current through said battery string dropping below a prescribed threshold is met by the AC ripple current being measured having a low limit and a high limit and an alarm being activated when the AC ripple current is detected out of the bounds of those two limits (abstract).

Regarding claims 12 and 21, the claims are interpreted and rejected as claim 2 stated above.

Regarding claims 13 and 29, the claims are interpreted and rejected as claim 5 stated above.

Regarding claims 14 and 31, the claims are interpreted and rejected as claim 6 stated above.

Regarding claims 17, 23, 24 and 30, the claims are interpreted and rejected as claim 4 stated above.

Regarding claim 32, the claim is interpreted and rejected as claim 9 stated above.

7. Claims 10, 20, 27 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kissel in view of Hammond et al. (Hammond; US Patent Publication 2002/0138775).

Regarding claim 10, Kissel discloses all of the claimed limitations except for the claimed message initiates generation of an electronic message (email) to a prescribed recipient and wherein said email describes said battery failure of said battery string.

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Hammond discloses *Power Supply Event Notification System* that teaches notifying remote users of the system of a power supply failure event through email (paragraphs 7 and 15). Modifying the device of Kissel to include means to notify remote users through email that a potential problem has been detected would allow users to work remotely from the system and still be able to respond to problems quickly. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Kissel according to the teachings of Hammond to include email notifications of power supply problems.

Regarding claims 20, 27, and 33, the claims are interpreted and rejected as claim 10 stated above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mercado, *Backup Battery Monitoring Device And Method*, US Patent 6,124,797;

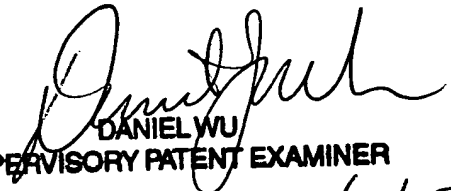
Burmenko, *Battery Charger Failure Alarm Circuit*, US Patent 4,441,066.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis R. Hunnings whose telephone number is (571) 272-3118. The examiner can normally be reached on 8:00 am - 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRH


DANIEL WU
SUPERVISORY PATENT EXAMINER
10/02/05